Patent Claims

1. A method for determining a future travel-path area of a first vehicle (700), which is equipped with a distance sensor,
- at least the relative positions (707, 708) of at least one vehicle traveling ahead (702, 703) being determined with respect to the first vehicle (700), using the distance sensor at preestablished or selectable time points,
- at least these determined, relative positions (707, 708) being stored in at least one storage device,
- these relative positions (707, 708), stored in the storage device, constituting in each case a course path (709, 710) of the corresponding vehicles traveling ahead (702, 703), and
- the future travel-path area of the first vehicle (700) being determined at least on the basis of the course path (709, 710) of the vehicle traveling ahead (702, 703), wherein
- the course path (709, 710) of the vehicle traveling ahead (702, 703) is projected in the direction of the position of the first vehicle (700).

2. The method as recited in Claim 1,
wherein the projection of the course path of the vehicle traveling ahead (702, 703) occurs up to the position in which the first vehicle is located.

3. The method as recited in Claim 1 or 2,
wherein between the projected course path (709, 710, 710.a) of the vehicle traveling ahead (702, 703) and the current course path of the first vehicle (700), a transverse offset (711, 712) and/or a curvature is determined.

4. The method as recited in Claim 3,

wherein a future travel-path area of the first vehicle (700) is determined, using the transverse offset (711, 712) and/or the curvature of the course path of the first vehicle (700) with respect to the projected course path (709, 710, 710.a) of the vehicle traveling ahead (702, 703).

5. The method as recited in Claim 4,
wherein the future travel-path area is determined on the basis of the projected course paths (709, 710, 710.a) of a plurality of vehicles traveling ahead (702, 703), and that a lane change of one single vehicle traveling ahead (702, 703) is filtered out using comparison, correlation, or an average of the projected course paths of all vehicles traveling ahead (702, 703).

6. The method as recited in Claim 1,
wherein the stored course paths (709, 710, 710.a) of the vehicles traveling ahead (702, 703), at selected and/or freely selectable time points, are compared with the current coordinate system of the first vehicle (700).

7. The method as recited in Claim 1,
wherein the projection of the course path (709, 710, 710.a) of the vehicle traveling ahead (702, 703) is accomplished using statistical analyses and/or mathematical interpolation procedures on the stored relative positional data (707, 708).

8. The method as recited in Claim 1,
wherein the projected course paths (709, 710, 710.a) of the vehicles traveling ahead (702, 703) are evaluated using at least one performance criterion, which contains both statistical as well as nonpredictable and predictable components.

9. The method as recited in Claim 8,

wherein a projected course path (709, 710, 710.a) of a vehicle traveling ahead (702, 703), which has a performance criterion that is lower than a predetermined threshold value,
- is deleted from the storage device and/or
- is not considered for determining the future travel-path area of the first vehicle (700).

10. The method as recited in Claim 1,
wherein the storage device is organized as a ring storage device.

11. The method as recited in Claim 1,
wherein, if the storage device is full, for storing at least one new course path of a further vehicle traveling ahead, in accordance with a further performance criterion, which is based only on predictable components, the decision is made whether at least one of the previously stored course paths and/or at least one new course path should be deleted.

12. The method as recited in Claim 1,
wherein the future travel-path area is limited on the basis of the positions of detected, stationary objects (704, 705, 706) or on the basis of the positions of detected, oncoming vehicles.

13. The method as recited in Claim 1,
wherein
- at least one further future travel-path area of the first vehicle (700) is determined on the basis of a steering angle, a steering wheel angle, a yaw rate, a difference of wheel speeds, or a transverse acceleration of the first vehicle (700), or on the basis of stationary objects or oncoming vehicles which are detected by the distance sensor of the first vehicle (700) and
- a verified future travel-path area is determined on

basis of the first and second determined future travel-path area.

14. A device for carrying out the method as recited in Claim 1, comprising,
- a distance sensor, which at preestablished or selectable time points determines at least the relative positions (707, 708) of at least one vehicle traveling ahead (702, 703) with respect to the first vehicle (700),
- at least one storage device, in which these determined relative positions (707, 708) are stored,
- means, in each case, to formulate, from these relative positions (707, 708) stored in the storage device, a travel-path (709, 710) of the corresponding vehicle traveling ahead (702, 703), and
- means to determine the future travel-path area of the first vehicle (700), at least on the basis of the course path (709, 710) of the vehicle traveling ahead (702, 703),
wherein
- means are present to project the travel-path (709, 710) of the vehicle traveling ahead (702, 703), in the direction of the position of the first vehicle (700).

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